

NWS FORM E-19 (COVER)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

REPORT ON RIVER GAGE STATION

REVISED, PRINTED DATES: 08/01/2006, 08/22/2010

LOCATION: BELOIT
STREAM: SOLOMON RIVER
BASIN: SOLOMON 12

HSA: GID

REFERENCES:

NWS E19 FORM - 12/22/1993
USGS STATION DESCRIPTION - 11/6/58
WB FORM 531-4 FOR BELOIT - 4/23/58

ABBREVIATIONS:

BM - bench mark	EPA - Environmental Protection Agency
DS - downstream	IBWC - International Boundary and Water Comm.
US - upstream	MSRC - Mississippi River Commission
HW - high water	MORC - Missouri River Commission
LW - low water	NOAA - National Oceanic and Atmospheric Admin.
RB - right bank	NOS - National Ocean Survey
LB - left bank	NWS - National Weather Service
MGL - mean gulf level	TVA - Tennessee Valley Authority
MLW - mean low water	USACE - U.S. Army Corps of Engineers
MSL - mean sea level	USBR - U.S. Bureau of Reclamation
MLT - mean low tide	USGS - U.S. Geological Survey
MT - mean tide	USWB - U.S. Weather Bureau
WQ - water quality	NGVD - National Geodetic Vertical Datum
RM - reference mark	NAD - North American Datum
RP - reference point	

LOCATION IDENTIFICATION: BLTK1
NWS INDEX NUMBER: 14-0699-2
USGS NUMBER:

MAP OF GAGE LOCATION

LATITUDE: 39 27 11
LONGITUDE: 98 06 52

SOURCE: B44

LOCATION: SOLOMON RIVER at BELOIT, KS
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BENCHMARKS

ELEVATION OF GAGE ZERO: 1339.010 VERTICAL DATUM: NGVD 1929
 LEVELING AGENCY AND DATE: 06/17/2002 CHECKBAR: 43.450
 RATING AGENCY:

BENCHMARK	DESCRIPTION	GAGE ZERO	DATUM
BM1	USC&GS "F-166 1934", AT CENTER OF THE EAST SIDE OF MITCHELL COUNTY COURTHOUSE AND IN THE TOP OF NORTH WALL AT ENTRANCE TO BASEMENT. STANDARD DISK SET VERTICALLY IN WALL AND STAMPED F-166 1934. DID NOT USE FOR LEVEL 6/17/02.	56.384	1395.394
BM4	STANDARD BRASS TABLET ON LEFT DOWNSTREAM WINGWALL OF HIGHWAY BRIDGE. ELEVATION CHANGED 6/02 PER NEW LEVEL DONE.	41.028	1380.038

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GAGES

DCP

TELEM

NESS ID:
 OWNER:
 REPORT TIME:
 INTERVAL:
 TYPE OF TELEMETRY:
 OWNER:
 PHONE NUMBER:
 INTERVAL:
 PAYOR/COST OF LINE: / \$

GAGE TYPE	OWNER	MAINTENANCE	BEGAN	ENDED	GAGE LOCATION/REMARKS
staff	USGS	USGS	04/20/1895	06/30/1897	STATION ESTABLISHED BY THE USGS IN THE AREA OF THE K-14 BRIDGE BUT THE EXACT LOCATION AND DATUM IS UNKNOWN. THE GAGE WAS AN INCLINED LOW WATER STAFF AND HIGH WATER SCALE PAINTED ON THE BRIDGE PIER. RECORDS FOR THIS SITE WERE DISCREDITED.
wireweight	NWS	NWS	08/01/1904	09/21/1934	STATION RE-ESTABLISHED ON THIS DATE WITH CHAIN AND WEIGHT GAGE OF THE USGS PATTERN HAVING A 10-FT EXTENSION SCALE. INSTALLATION MADE ON THE DS SIDE OF IRON BRIDGE OVER THE SOLOMON RIVER.
wireweight	USGS	NWS	04/19/1918	06/10/1958	A SHORT BOX TYPE CHAIN AND WEIGHT REPLACEMENT WAS MADE ON THE DS HANDRAIL. GAGE WAS GRADUATED AND REFERRED TO CURRENT BM2. USGS BEGAN JOINT USE ON 4/14/1929.
Unk	USGS	USGS	03/19/1930	06/09/1958	USGS INSTALLED A STREAM GAGING RECORDER AT THE BRIDGE WITH ZERO DATUM AT 1339.240 FT. USGS MOVED THIS 3/29/46 TO A POINT 100 FT. US FROM DAM...ZERO DATUM - 1339.24 USGS REMOVED THIS GAGE TO A LOCATION ABOUT 8.5 MILES DS AT ZERO DATUM 1324.82.
wireweight	NWS	NWS	09/21/1934		THIS GAGE REPLACED C&W GAGE AT THE BRIDGE. INSTALLATION WAS ON THE DS HANDRAIL 14.3 FT. NORTH OF THE PREVIOUS C&W, BUT GAGE WAS MOVED 11/20/35 TO LOCATION 157.5 FEET FROM LB ABUTMENT AND 70.5 FT DS FROM PIER ON LB, DUE TO CHANGE IN LOW WATER CHANNEL.
staff	NWS	NWS	03/29/1946		GAGES INSTALLED AND ATTACHED TO THE SIDE OF THE RECORDER WELL, FOR USE IN CHECKING STAGES IN WELL GAGE. NEW STAFF GAGE INSTALLED 6/17/02 WITH NEW LEVELS DONE AT SITE.
staff	NWS	NWS	06/17/2002		A STAFF GAGE PAINTED ON THE WATER WORKS TOWER UPSTREAM OF THE WIRE WEIGHT GAGE.

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HISTORY

PUBLICATION/LOCATION OF RECORDS	STARTING DATE	ENDING DATE
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DAILY RIVER STAGES	08/01/1904	05/23/1972
WATER SUPPLY PAPER	04/14/1929	06/09/1958

TYPE OF GAGE	OWNER	STARTING DATE	ENDING DATE
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staff	USGS	04/20/1895	06/30/1897
wireweight	NWS	08/01/1904	09/21/1934
wireweight	USGS	04/19/1918	06/10/1958
Unk	USGS	03/19/1930	06/09/1958
wireweight	NWS	09/21/1934	
staff	NWS	03/29/1946	
staff	NWS	06/17/2002	

ZERO ELEVATION	STARTING DATE
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1339.240	08/01/1904
1339.012	01/01/1929
1339.120	12/11/1963

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CRESTS

FLOOD STAGE: 20.00 ACTION STAGE: 18.00 BANKFULL STAGE: 18.00
 FLOOD FLOW: 4444 ACTION FLOW: 3680

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
06/03/1918	UNDEF	26.80					
09/20/1919	UNDEF	33.60					
05/25/1923	UNDEF	28.80					
09/17/1926	UNDEF	27.40					
04/16/1927	UNDEF	29.00					
09/02/1928	UNDEF	28.80					
06/08/1929	UNDEF	26.40					
06/03/1935	UNDEF	34.50					
06/19/1935	UNDEF	28.40					
08/16/1939	UNDEF	27.70					
06/11/1941	UNDEF	35.90					
09/05/1941	UNDEF	29.00					
10/10/1941	UNDEF	26.30					
06/18/1943	UNDEF	27.80					
05/04/1944	UNDEF	29.10					
07/19/1945	UNDEF	27.80					
09/08/1946	UNDEF	29.40					
09/15/1946	UNDEF	28.60					
10/11/1946	UNDEF	26.90					
03/09/1947	UNDEF	26.50					
02/26/1949	UNDEF	26.80					
06/11/1949	UNDEF	27.80					
06/16/1949	UNDEF	28.10					
05/10/1950	UNDEF	26.40					
06/18/1950	UNDEF	26.10					
08/15/1950	UNDEF	33.30					
08/30/1950	UNDEF	28.10					
05/24/1951	UNDEF	29.80					
06/09/1951	UNDEF	32.20					
06/24/1951	UNDEF	35.40					
06/30/1951	UNDEF	27.30					
07/13/1951	UNDEF	39.30					
09/06/1951	UNDEF	27.20					
06/19/1957	UNDEF	34.30					
05/19/1958	UNDEF	24.10					
05/30/1959	UNDEF	20.40					
03/28/1960	UNDEF	32.20					
05/24/1961	UNDEF	36.80					
06/05/1962	UNDEF	24.80					
09/25/1963	UNDEF	22.40					
09/06/1964	UNDEF	18.10					
06/28/1965	UNDEF	23.80					

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LOW WATER RECORDS

DATE OF LOW WATER	STAGE (ft)	FLOW (CFS)	REMARKS
08/01/1904	-15.00		DATA NOT RESEARCHED DUE TO DAM 600 FT. US

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CONDITIONS AFFECTING FLOW

MILES ABOVE MOUTH: 145.6 DRAINAGE AREA: 5440.0 POOL STAGE: 0.0

STREAM BED: COMPOSED MAINLY OF SILT, SAND AND GRAVEL.

REACH: MOUTH OF SALT CREEK TO BELOW GLEN ELDER LAKE.

REGULATION: GLEN ELDER LAKE LOCATED 28.6 MILES UPSTREAM, HAS BEEN IN OPERATION SINCE 10/18/67. CITY LIGHT PLANT PROVIDES PERMANENT CONTROL EXCEPT WHEN GATES ARE OPENED.

DIVERSION: UNKNOWN

WINTER: CHANNEL SUBJECT TO FREEZING AND ICE JAMS.

TOPOGRAPHY: BANKS ARE WOODED AND HIGH ENOUGH TO PREVENT LOCAL OVERFLOW AT EXTREME STAGES OF OVER 32 FEET. AT GAGE HEIGHTS OF 18-20 FEET, OVERFLOW BEGINS IN THE LOWER SECTIONS ALONG CHANNEL.

REMARKS: LOW LYING CITY PARK ADJACENT TO UPSTREAM SIDE OF HIGHWAY BRIDGE. CITY IN LITTLE DANGER OF FLOODING AS IT SITS ON A RISE IMMEDIATELY TO THE NORTH. RIVER BANKS HIGH AND STEEP.

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DAMAGE

STAGE AREAS AFFECTED

18.00 RURAL OVERFLOWS BEGIN WITH ONLY DAMAGE TO A FEW CROPS IN THE LOWER AREAS.
20.00 FLOOD STAGE. OVERFLOWS BEGIN IN SMALL CITY PARK AND FAIRGROUNDS.
22.00 BRIDGE ON COUNTY HIGHWAY S-1033 - 2 MILES SSE OF TOWN IS CLOSED.
26.00 8900 ACRES FLOODED.
28.00 12100 ACRES FLOODED.
30.00 16100 ACRES FLOODED. BRIDGE ON COUNTY HIGHWAY C-490, 2 MILES WEST OF TOWN IS FLOODED.
36.00 FLOODING BEGINS IN BELOIT AT LOWER SECTIONS AT THE SOUTH AND SOUTHWEST SIDES OF TOWN.
44.00 74500 ACRES FLOODED.

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RIVER STAGE DATA

	56-		
	51-		
	46-		
44.00 - 74500 ACRES FLOODED.	41-		
		39.30	07/13/1951
	36-	36.80	05/24/1961
36.00 - FLOODING BEGINS IN BELOIT AT LOWER SECTIONS AT THE SOUTH AND SOUTHWEST SIDES OF TOWN.		35.90	06/11/1941
		34.50	06/03/1935
		33.60	09/20/1919
		32.20	03/28/1960
	31-		
30.00 - 16100 ACRES FLOODED. BRIDGE ON COUNTY HIGHWAY C-490, 2 MILES WEST OF TOWN IS FLOODED.		29.80	05/24/1951
28.00 - 12100 ACRES FLOODED.		28.80	09/02/1928
		27.80	06/11/1949
26.00 - 8900 ACRES FLOODED.	26-	26.90	10/11/1946
		24.80	06/05/1962
		23.80	06/28/1965
22.00 - BRIDGE ON COUNTY HIGHWAY S-1033 - 2 MILES SSE OF TOWN IS CLOSED.		22.40	09/25/1963
	21-		
20.00 - FLOOD STAGE. OVERFLOWS BEGIN IN SMALL CITY PARK AND FAIRGROUNDS.		20.40	05/30/1959
18.00 - RURAL OVERFLOWS BEGIN WITH ONLY DAMAGE TO A FEW CROPS IN THE LOWER AREAS.		18.10	09/06/1964
	16-		
	11-		
	6-		

REACH: MOUTH OF SALT CREEK TO BELOW GLEN ELDER LAKE.

ELEVATION ZERO: 1339.01

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CONTACTS

SQ	CONTACT/REMARKS	PHONE
2	WFO HASTINGS MAINTENANCE.	402-462-2127

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